
JOURNAL OF
NATURAL
HISTORY

An international journal of systematics, interactive biology, and
biodiversity, previously the *Annals & Magazine of Natural History*,
founded in 1841

Editors: P. G. Moore
A. Polaszek
P. J. Hayward

1997
VOLUME 31
CONTENTS



Taylor & Francis
Publishers since 1798

2H
708

JOURNAL OF NATURAL HISTORY

EDITORS

P. G. MOORE

*University Marine Biological Station, Millport, Isle of Cumbrae,
Scotland KA28 0EG, UK*

A. POLASZEK

*The Natural History Museum, Cromwell Road, London SW7 5BD, UK
and International Institute of Entomology, An Institute of CABI,
56 Queen's Gate, London SW7 5JR, UK*

P. J. HAYWARD

*School of Biological Sciences, University of Wales Swansea, Singleton Park, Swansea
SA2 8PP, UK*

EDITORIAL ADVISERS

P. ARNAUD *Centre d'Océanologie de Marseille, Station Marine d'Endoume, Rue de
la Batteries-des-Lions, F-13007, Marseille, France*

P. GREENSLADE *CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT
2601, Australia*

I. D. HODKINSON *School of Biological and Earth Sciences, Liverpool John Moores
University, Liverpool L3 3AF, UK*

A. G. HUMES *Boston University Marine Program, Marine Biological Laboratory,
Woods Hole, MA 02543, USA*

J. KIKKAWA *Department of Zoology, University of Queensland, Brisbane, Queensland
4072, Australia*

W. E. MAGNUSSON *Departamento de Ecologia, INPA, Caixa Postale 478, 69011-970
Manaus Am, Brazil*

P. K. L. NG *Department of Zoology, National University of Singapore, Faculty of
Science, Lower Kent Ridge Road, 0511 Singapore*

G. G. TEUGELS *Section Vertébrés, Laboratoire d'Ichtyologie, Musée Royal de
l'Afrique Centrale, B-3080 Tervuren, Belgium*

R. A. WHARTON *Department of Entomology, Texas A&M University, College
Station, TX 77843-2475, USA*

The Editors are assisted by an international panel of specialist consultants.

Subscription Information

Journal of Natural History (ISSN 0022-2933) is published by Taylor & Francis Ltd, 1 Gunpowder Square EC4A 3DE, London UK
Tel: +44 (0)171 583 0490; Fax +44 (0)171 583 0581.

Annual subscription 1998 £810, US \$1336.

Periodical postage paid at Jamaica, NY 11431, USA. US Postmasters: Send address changes to *Journal of Natural History*, Publications
Expediting Inc., 200 Meacham Avenue, Elmont, NY 11003, USA. Air freight and mailing in the USA by Publications Expediting Inc.
Typeset, printed and bound by The Charlesworth Group, Huddersfield, UK.

Dollar rates apply to subscribers in all countries except the UK and the Republic of Ireland where the pound sterling price applies. All
subscriptions are payable in advance and all rates include postage. Journals are sent by air to the USA, Canada, Mexico, India, Japan,
and Australasia. Subscriptions are entered on an annual basis, i.e. from January to December. Payment may be made by sterling cheque,
dollar cheque, international money order, National Giro, or credit card (Annex, Visa, Mastercard/Access).

Orders originating in the following territories should be sent direct to the local distributor **India:** Universal Subscription Agency Pvt.
Ltd, 101-102 Community Centre, Malviya Nagar Extn, Post Bag No. 8, Saket, New Delhi 11017. **Japan:** Kinokuniya Company Ltd,
Journal Department, PO Box 55, Chitose, Tokyo 156, **USA, Canada and Mexico:** Taylor & Francis Inc., 1900 Frost Road, Suite 101,
Bristol, PA 19007, USA. **UK and all other territories:** Taylor & Francis Ltd, Rankine Road, Basingstoke, Hampshire RG24 8PR, UK.

Advertisements

All advertisement enquiries to: Di Owen Marketing, 15 Upper Grove Road, Alton, Hampshire GU34 1NW, UK. Tel/Fax +44 (0)1420
89142 (for the word excluding the USA), or Advertising Department, Taylor & Francis Inc. 1900 Frost Road Suite 101, Bristol, PA 19007,
USA. Tel +215 785 5800 ext. 35; Fax: +215 785 5515 (for USA and North America).

CONTENTS OF VOLUME 31

Volume 31 Number 1 January 1997

The direction of evolution within the Polychaeta <i>W. Westheide</i>	1
Re-description of two earthworms (Megascolecidae: Oligochaeta) from Rennell, Solomon Islands <i>R. J. Blakemore</i>	17
A re-examination of <i>Grania monochaeta</i> (Michaelsen) (Oligochaeta: Enchy- traeidae), with descriptions of two new species from subantarctic South Georgia <i>R. Rota and C. Erséus</i>	27
A new vestimentiferan (Pogonophora: Obturata) from hydrothermal vent fields in the Manus Back-arc Basin (Bismarck Sea, Papua New Guinea, Southwest Pacific Ocean) <i>E. C. Southward and S. V. Galkin</i>	43
Copepoda (Siphonostomatoida) associated with the fungiid coral <i>Para- halomitra</i> in the southwestern Pacific <i>A. G. Humes</i>	57
Lernaeid copepods (Cyclopoida) parasitic on freshwater fishes of Thailand <i>J.-S. Ho and I.-H. Kim</i>	69
New <i>Exodiceropsis</i> Schellenberg (Crustacea: Amphipoda: Exodicerotidae) from the Argentine continental shelf and re-description of <i>E. chiltoni</i> Schellenberg <i>G. M. Alonso de Pina</i>	85
A taxonomic reassessment of the trioqid genus <i>Bactericera</i> (Hemiptera: Psylloidea) <i>D. Burckhardt and P. Lauterer</i>	99
Book reviews	155

Volume 31 Number 2 February 1997

<i>Erpobdella punctata</i> (Hirudinea: Erpobdellidae) as phoronts on <i>Ambystoma maculatum</i> (Amphibia: Ambystomatidae) <i>R. N. Khan and M. G. Frick</i>	157
The alpheid shrimp genus <i>Potamalpheops</i> Powell, 1979, (Crustacea: Decapoda: Caridea: Alpheidae) from Southeast Asia, with descriptions of three new species <i>D. C. J. Yeo and P. K. L. Ng</i>	163
Asian and Oriental Torrenticolidae Piersig, 1902 (Acari: Hydrachnidia: Lebertioidea): a revision of the family and descriptions of new species of <i>Terrenticola</i> Piersig and <i>Pseudotorrenticola</i> Walter, from Southeast Asia <i>P. R. Wiles</i>	191

Jumping plantlice (Insecta: Hemiptera) attacking <i>Lonchocarpus</i> species (Leguminosae), including 'Black Cabbage Bark', in Belize <i>D. Hollis and J. H. Martin</i>	237
Biogeography and ecology of the ant fauna of Madagascar (<i>Hymenoptera: Formicidae</i>) <i>B. L. Fisher</i>	269
On snake-like dentition in mosasaurian lizards <i>M. S. Y. Lee</i>	303

Volume 31 Number 3 March 1997

Redescription of the hermit-crab sponge <i>Spongosorites suberitoides</i> Diaz, Pomponi and van Soest (Demospongiae: Halichondrida: Halichondriidae) <i>F. Sandford and M. Kelly-Borges</i>	315
Species of <i>Staurotheca</i> Allman, 1888 (Cnidaria: Hydrozoa) from recent antarctic expeditions with R. V. <i>Polarstern</i> , with the description of six new species. <i>A. L. Peña Cantero, A. Svoboda and W. Vervoort</i>	329
On new and puzzling American rotifer (Rotifera: Monogononta, Lecanidae) <i>H. Segers and R. Pourriot</i>	383
Comparative morphology of the foregut of three <i>Eucopia</i> species (Crustacea, Mysidacea, Lophogastrida) <i>L. De Jong and B. Casanova</i>	389
Taxonomy and ecology of two endemic freshwater crabs from western Jamaica with the description of a new <i>Sesarma</i> species (Brachyura: Grapsidae: Sesarminae) <i>C. D. Schubart, J. Reimer, R. Diesel and M. Türkay</i>	403
Six new species of <i>Microstigma</i> wasps (Hymenoptera: Sphecidae), with notes on their biology <i>G. A. R. Melo and R. W. Matthews</i>	421
Competition between ants for coconut palm nesting sites <i>M. J. Way and B. Bolton</i>	439
Two nesting behaviours and life history of a subsocial African dung-rolling beetle, <i>Scarabaeus catenatus</i> (Coleoptera: Scarabaeidae) <i>H. Sato</i>	457
Species composition of beetles (Coleoptera) in the bracket fungi <i>Piptoporous betulinus</i> and <i>Fomes fomentarius</i> (Aphyllophorales: Polyporaceae): an explorative approach with canonical correspondence analysis <i>K. H. Thunes and E. Willassen</i>	471
Book reviews	487

Volume 31 Number 4 April 1997

Euptyctine oribatid mites from Tasmanian rainforest (Acari: Oribatida) <i>W. Niedbala and M. J. Colloff</i>	489
Mites (Acarina: Astigmata) associated with adult freshwater leeches (Hirudinea: Erpobdellidae) <i>H. C. Proctor, H. M. Gray and B. M. O'Connor</i>	539
Oribatid mites (Acari: Oribatida) of sub-Antarctic Heard Island <i>J. Starý, W. Block and P. Greenslade</i>	545
The marine fauna and flora of the Isles of Scilly—Mollusca <i>S. M. Turk and D. R. Seaward</i>	555
The parasitoid complex attacking Finnish populations of the Glanville fritillary <i>Melitaea cinxia</i> (Lep: Nymphalidae), an endangered butterfly <i>G. C. Lei, V. Vikberg, M. Nieminen and M. Kuussaari</i>	635
Age-related body weight, fecundity and population change in a south Dorset sika population (<i>Cervus nippon</i>); 1985–1993 <i>R. J. Putman and J. R. Clifton-Bligh</i>	649
Book reviews	661

Volume 31 Number 5 May 1997

New Rotifera from the Korup National Park, Cameroon <i>H. Segers and J. Mertens</i>	663
Review of the taxonomy and biogeography of shallow-water mysids of the genus <i>Archaeomysis</i> (Crustacea: Mysidacea) in the North Pacific Ocean <i>Y. Hanamura</i>	669
Extended parental care in two endobenthic amphipods <i>M. Thiel, S. Sampson and L. Watling</i>	713
Partial DNA sequences from the mitochondrial cytochrome oxidase subunit I (COI) gene can differentiate the intermediate snail hosts <i>Bulinus globosus</i> and <i>B. nasutus</i> (Gastropoda: Planorbidae) <i>J. R. Stothard and D. Rollinson</i>	727
Some anatomical and behavioural aspects of reproduction in members of an unusual teleost family: the Phallostethidae <i>E. Y.-M. Mok and A. D. Munro</i>	739
Revision of <i>Yelicones</i> (Hymenoptera: Braconidae: Rogadinae) from the East Palearctic and Oriental regions with descriptions of four new species <i>D. L. J. Quicke, M. J. K. Chishti, X. Chen and R. A. Krft</i>	779
Embryonic and larval development of the giant goby <i>Gobius cobitis</i> (Pisces: Gobiidae) <i>M. F. Gil, E. J. Gonçalves, C. Faria, V. C. Almada, C. Baptista and H. Carreiro</i>	799

New records of bats (Chiroptera: Mammalia) from Malawi, east-central Africa, with an assessment of their status and conservation <i>M. Happold and D. C. D. Happold</i>	805
Book reviews	837

Volume 31 Number 6 June 1997

Les Cumacés (Crustacea) des campagnes Eumeli 2, 3 et 4 au large du Cap Blanc (est Atlantique tropical) <i>M. Ledoyer</i>	841
First zoeal stages of <i>Grapsus adscensionis</i> (Osbeck) and <i>Planes minutus</i> (Linnaeus) (Brachyura: Grapsidae) described from laboratory hatched material, with notes on larval characters of the Grapsinae <i>J. A. Cuesta, J. I. González-Gordillo and A. Rodríguez</i>	887
The pollination and breeding system of <i>Dipterocarpus obtusifolius</i> (Dipterocarpaceae) in dry deciduous forests of Thailand <i>J. Ghazoul</i>	901
A review of the species of <i>Calvia</i> (Coleoptera: Coccinellidae) from the Indian subcontinent, with descriptions of two new species <i>R. G. Booth</i>	917
<i>Homichloda barkeri</i> (Jacoby) (Coleoptera: Chrysomelidae: Alticinae), a candidate agent for the biocontrol of prickly acacia, <i>Acacia nilotica</i> (Mimosaceae) in Australia <i>M. L. Cox</i>	935
Parasitic Hymenoptera inhabiting seeds of <i>Ephedra nebrodensis</i> in Spain, with descriptions of a phytophagous pteromalid and four other new species of Chalcidoidea <i>R. R. Askew and J. Blasco-Zumeta</i>	965
Investigations of an association between the stinkhorn fungus and badger setts <i>D. P. Sleeman, P. Jones and J. N. Cronin</i>	983
Book reviews	993
Announcement	997

Volume 31 Number 7 July 1997

Cladistic relationships within <i>Amphiglena</i> Claparède (Polychaeta: Sabeliidae) with a new species and a redescription of <i>A. mediterranea</i> (Leydig) <i>G. W. Rouse and M. C. Gambi</i>	999
Copepodid stages of <i>Lichomolgus forficula</i> Thorell 1859 (Copepoda; Poecilostomatoida; Lichomolgidae), a copepod associated with <i>Phallusia mammillata</i> (Cuvier, 1815) <i>G. Costanzo, N. Crescenti and N. Calafiore</i>	1019
Comparative morphology of the foregut of four <i>Gnathophausia</i> species (Crustacea; Mysidacea; Lophogastrida). Relationships with other taxa <i>L. De Jong and J.-P. Casanova</i>	1029

Bathyal cumaceans of the Catalan Sea (North-western Mediterranean): faunistic composition, diversity and near-bottom distribution along the slope (between 389 and 1859 m) <i>J. E. Cartes and J. C. Sorbe</i>	1041
The reproductive cycle of <i>Mothocya epimerica</i> (Isopoda: Cymothoidae) a parasite of the sand smelt, <i>Atherina boyeri</i> (Osteichthyes: Atherinidae), in the Lesina Lagoon, Italy <i>G. Bello, A. Vaglio and G. Piscitelli</i>	1055
<i>Apodidymochelia</i> , a new genus of gammaridean amphipod from the tropical Atlantic Ocean (Crustacea: Amphipoda: Didymocheliidae) <i>M. H. Thurston</i>	1067
New taxa of Rhagidiidae (Acari: Prostigmata) from North America. Part V. Genus <i>Robustoches</i> Zacharda, with a key to world species of the genus <i>M. Zacharda</i>	1075
Insect herbivores and their natural enemies in the mangals of the Andaman and Nicobar Islands <i>K. Veenakumari, P. Mohanraj and A. K. Bandyopadhyay</i>	1105
Sound production in primitive Orthoptera from Western Australia: sounds used in defence and social communication in <i>Ametrus</i> sp. and <i>Hadrogryllacris</i> sp. (Gryllacrididae: Orthoptera) <i>L. H. Field and W. J. Bailey</i>	1127
A review of the genus <i>Sisyrophanus</i> Karsh 1886 (Diptera: Bombyliidae) <i>D. J. Greathead</i>	1143
Book reviews	1153

Volume 31 Number 8 August 1997

Ampeliscidae (Amphipoda) from Iceland with a description of a new species (Contribution to the BIOICE research programme) <i>D. Bellan-Santini and J. C. Dauvin</i>	1157
Aspects of the life history and reproductive biology of the introduced terrestrial amphipod <i>Arcitalitrus dorrieni</i> (Hunt) at two sites in Co. Galway, Ireland <i>R. P. O'Hanlon and T. Bolger</i>	1175
A new species of <i>Metaprotella</i> (Crustacea: Amphipoda: Caprellidea) from east Africa, with key to the genera of Protellidae and discussion of generic characters <i>K. Larsen</i>	1203
A new pontonine shrimp genus (Crustacea: Decapoda) from the Yemen, with a note on other species <i>A. J. Bruce</i>	1213
<i>Thalassarachna</i> and <i>Halacarellus</i> (Halacaridae: Acari): two separate genera <i>I. Bartsch</i>	1223
The homology of glands and glandularia in the water mites (Acari: Hydrachnidia) <i>P. R. Wiles</i>	1237

Systematics and fossil evidence of host-parasitoid relationships of <i>Calamiscus</i> Borgmeier (Diptera: Phoridae) <i>B. V. Brown</i>	1253
An introduced new species of <i>Lecanoideus</i> (Homoptera: Aleyrodidae) established and causing economic impact on the Canary Islands <i>J. H. Martin, E. Hernandez-Suarez and A. Carnero</i>	1261
Structure of the ovipositor, associated sensilla and spermathecal system of entomoparasitic pipunculid flies (Diptera Pipunculidae) <i>M. Kozánek and A. Belcari</i>	1273
<i>Cubitermes subarquatus</i> termitaries as shelters for soil fauna in African rainforests <i>A. Dejean, B. Bolton and J. L. Durand</i>	1289
Book reviews	1303

Volume 31 Number 9 September 1997

A new Brazilian species of <i>Heterothrips</i> (Insecta: Thysanoptera) co-existing with ants in the flowers of <i>Peixotoa tomentosa</i> (Malpighiaceae) <i>K. Del-Claro, R. Marullo and L. A. Mound</i>	1307
Ecological studies on <i>Aechmea bracteata</i> (Swartz) (Bromeliaceae) <i>A. Dejean and I. Olmsted</i>	1313
A remarkable, new Australian sawfly with brachypterous, nocturnal or crepuscular females (Hymenoptera: Symphyta: Pergidae) <i>I. D. Naumann</i>	1335
Revision of the Palaearctic rove beetles of the genus <i>Megarthrus</i> Curtis (Coleoptera: Staphylinidae: Proteininae) <i>G. Cuccodoro and I. Löbl</i>	1347
Some new and unrecorded <i>Arrenurus</i> Dugès 1834 (Acari: Hydrachnellae) species from Turkey <i>O. Erman and M. Özkan</i>	1417
Atlantic and Mediterranean species of the genus <i>Andaniexis</i> Stebbing (Amphipoda: Stegocephalidae) <i>J. Berge and W. Vader</i>	1429

Volume 31 Number 10 October 1997

The affinities of European sand gobies (Teleostei: Gobiidae) <i>S. I. McKay and P. J. Miller</i>	1457
Development of <i>Caligus multispinosus</i> Shen, a caligid copepod parasitic on the black sea bream (<i>Acanthopagrus schlegeli</i>) cultured in Taiwan <i>C.-L. Lin, J. S. Ho and S. N. Chen</i>	1483

North Atlantic and Mediterranean species of the genus <i>Phippsiella</i> Schellenberg (Amphipoda: Stegocephalidae) <i>J. Berge and W. Vader</i>	1501
Revision of the Australian endemic genus <i>Hyptiogaster</i> (Hymenoptera: Gasteruptiidae), with descriptions of seven new species <i>J. T. Jennings and A. D. Austin</i>	1533
Hamuli in the Hymenoptera (Insecta) and their phylogenetic implications <i>H. H. Basibuyuk and D. L. J. Quicke</i>	1563
Dolichopodidae (Diptera) from Papua New Guinea XV. <i>Scepastopyga</i> gen. nov. and the establishment of a new subfamily, the Achalcinae <i>P. Grootaert and H. J. G. Meuffels</i>	1587
Book reviews	1601

Volume 31 Number 11 November 1997

Tent construction and social organization in <i>Cynopterus brachyotis</i> (Muller) (Chiroptera: Pteropodidae) in Peninsular Malaysia <i>K. H. Tan, A. Zubaid and T. H. Kunz</i>	1605
Records of ascidians from Bahrain, Arabian Gulf with three new species <i>C. Monniot and F. Monniot</i>	1623
A systematic revision of the large-scaled <i>Marcusenius</i> with description of a new species from Cameroon (Teleostei; Osteoglossomorpha; Mormyridae) <i>G. Boden, G. G. Teugels and C D. Hopkins</i>	1645
Opisthogastric earthworms (Megascolecidae: Oligochaeta) and allied forms in north-western Tasmania <i>R. J. Blakemore and T. J. Kingston</i>	1683
A new pontonine shrimp (Crustacea: Decapoda: Palaemonidae) from the Ryukyu Islands, Japan <i>A. J. Bruce and R. T. Bauer</i>	1709
A new species of <i>Thais</i> (Mollusca: Neogastropoda: Muricidae) with direct development from northwestern Australia <i>K. S. Tan</i>	1723
Book reviews	1743

Volume 31 Number 12 December 1997

A record of <i>Randiella</i> from New Caledonia, the first known occurrence of the marine interstitial family Randiellidae (Annelida; Oligochaeta) in the South Pacific Ocean <i>C. Erséus</i>	1745
---	------

A revision of the genus <i>Siamthelphusa</i> Bott, 1968 (Crustacea: Decapoda: Brachyura: Parathelphusidae), with descriptions of five new species from Thailand <i>P. K. L. Ng and P. Naiyanetr</i>	1751
Two new genera and some new species of Australian earthworms (Acanthodrilidae, Megascolecidae: Oligochaeta) <i>R. J. Blakemore</i>	1785
Hitchhiker or parasite? A ceratopogonid midge and its odonate host <i>A. G. Orr and P. S. Cranston</i>	1849
A new shield-bug species <i>Piezodorus grossi</i> (Het.: Pentatomidae) from the Australasian region previously confused with <i>P. hybneri</i> (Gmelin) <i>B. W. Staddon</i>	1859
Author index	1865